**Geometry/Algebra 2, Section 12.2 Surface Area of Prisms and Cylinders**

**P 806-08 #1-20 and #22-26**

1. See student drawings.
2. The formula states the surface area is equal to two times the area of the base plus the perimeter of the base times the height. The formula is true for cylinders as well as right prisms because  is the area of the base and is the circumference, or perimeter of the base. So,  is really .
3. The surface area is about .
4. The surface area is about .
5. The surface area is about .
6. The surface area is .
7. The surface area is .
8. The surface area is about 
9. The surface area is about .
10. The surface area is about .
11. The surface area is about .
12. The surface area is about .
13. The value of  is 9 yd.
14. The value of  is about 13.09 m.
15. The value of  is about 10.96 in.
16. The surface area is .
17. The surface area is 9 times the original surface area.
18. The new surface area is  the original area.
19. The surface area of the hexagonal prism is about .
20. The height of the cylinder is 3 m.
21. SKIP
22. The surface area is about .
23. a. The minimum amount of paper needed is .

b. The net of the box includes areas that are covered by the top, so there is extra material that is not touches by the paper.

c. The amount in part (a) is the exact amount of paper. It is better to have more so that there is some overlap of wrapping paper.

24. a. The surface area is about .

b. Double radius, 

Double height, 

Doubling the radius creates a greater surface area.

c. See the calculations/answers in (b).

25. A

26. Surface area of the prism: 

Surface area of the cylinder: 

The rectangular prism has a greater surface area, so it will take more material to make the rectangular prism recycle bin.